

List of Contents

Volume 3 Number 1

Papers

G. SPUR, I. FURGAC and
U. KIRCHHOFF

1 Robot system integration into computer-integrated
manufacturing

G. DUELEN, J. HELD and
U. KIRCHHOFF

11 Numerical analysis of the influence of internal number
representation on accuracy of coordinate transformation of
industrial robots

G. SELIGER, B. VIEHWEGER and
B. WIENEKE

15 Descriptive methods for computer-integrated manufacturing
and assembly

U. REMBOLD and T. SOETADJI

23 The development of an autonomous assembly robot

H. HAMMER

39 Flexible manufacturing cells and systems with computer
intelligence

H. WÖRN and G. STARK

55 Robot applications supported by CAD simulation

W. VON ZEPPELIN and
Ö. S. GANIYUSUFOGLU

63 Developments towards CIM by a machine tool builder

W. GUTSCHKE and K. MERTINS

77 CIM: competitive edge in manufacturing

H.-J. WARNECKE and
W. DANGELMAIER

89 Some thoughts on integration in CIM systems

M. WECK and G. KIRATLI

97 Applicability of expert systems to flexible manufacturing

D. REISCH

105 Total CIM concept embracing logistics

K. HITZ

123 Flexible integrated computer-aided manufacturing systems
increase productivity

129 New patents

135 Announcements

I Software Survey Section

Volume 3 Number 2

Editorial

J. HATVANY

139 Intelligent manufacturing systems

Papers

B. KRAMER and H. LIEBOWITZ	141 Intelligent materials processing
G. SPUR and D. SPECHT	147 Computer integrated manufacturing in future factories
A. W. J. CHISHOLM	157 The social effects of intelligent manufacturing systems
M. A. MELKANOFF	165 Education for intelligent manufacturing systems
L. NEMES	171 Intelligent interfaces
N. A. DUFFIE and R. S. PIPER	175 Non-hierarchical control of a flexible manufacturing cell
S.-G. KIM and N. P. SUH	181 Knowledge-based synthesis system for injection molding
V. R. MILAČIĆ and V. D. MAJSTOROVIĆ	187 EXMAS—knowledge based system for maintenance of complex mechanical systems
A. Y. C. NEE, N. BHATTACHARYYA and A. N. POO	195 Applying AI in jigs and fixtures design
G. DUELEN, U. KIRCHHOFF, R. BERNHARDT and G. SCHRECK	201 Algorithmic representation of work cells and task description for off-line programming
F. MAJOR and W. GROTKE	209 Knowledge engineering within integrated process planning systems
T. KISHINAMI, S. KANAI and K. SAITO	215 An integrated approach to CAD/CAPP/CAM based on cell-constructed-geometric-model (CCM)
G. SELIGER, B. VIEHWEGER and B. WIENEKE	221 Decision support in design and optimization of flexible automated manufacturing and assembly
B. SAUVE and A. COLLINOT	229 An expert system for scheduling in a flexible manufacturing system
Y. SOLOMENTSEV	235 Design and technology, computer science, and CIM implementation
F. JAKOB and D. VERNET	239 Application of expert systems to process control
I. PLANDER	245 Toward new, intelligent vision systems
V. KEMPE	257 Vision in industry
A. MÁRKUS	263 AI tools for intelligent manufacturing
D. SPECHT	269 Development of manufacturing production with knowledge based systems
	273 New patents

I Software Survey Section

Volume 3 Number 3*Papers*

- | | | |
|---|-----|---|
| H. KODATE, K. FUJII and K. YAMANOI | 275 | Representation of FMS with Petri Net graph and its application to simulation of system operation |
| P. T. CAT | 285 | Robust adaptive axis control of manipulator |
| O. Z. MAIMON and Y. F. CHOONG | 295 | Dynamic routing in reentrant flexible manufacturing systems |
| V. RAMACHANDRAN and S. VAJPAYEE | 301 | Safety in robotic installations |
| S. M. MILLER and S. R. BEREITER | 311 | Impact of automation on process control decision-making |
| C.-M. HU and Y. ITO | 319 | Evaluation of system configuration of FMC for metal cutting |
| Y. ITO | 327 | Evaluation of FMS: state of the art regarding how to evaluate system flexibility |
| T. C. E. CHENG | 335 | A simulation study of automated guided vehicle dispatching |
| A. E. FAHIM, S. SANKAR and R. M. H. CHENG | 339 | Computer-aided optimal design of a polar-based template digitizer-NC contouring system — I. Synthesis and contouring error minimization |
| A. E. FAHIM, S. SANKAR and R. M. H. CHENG | 349 | Computer-aided optimal design of a polar-based template digitizer-NC contouring system — II. Dynamic analysis |
| J. ENDO | 359 | Evaluation vector of FMS for sheet metal processing |
| M. RAHMAN and V. NARAYANAN | 365 | An expert system for process planning |
| | I | Software Survey Section |

Volume 3 Number 4*Papers*

- | | | |
|--|-----|--|
| T. SATA | 373 | Recent developments in computer-integrated manufacturing in Japan |
| S. SAKAUE and K. SUGIMOTO | 381 | Path generation by rate control of manipulators |
| Y. ONO | 389 | Cell control system |
| Y. NAKAMURA and H. HANAFUSA | 395 | 3D autonomous trajectory control of robot manipulators |
| H. KAMIMOTO and K. ENDO | 409 | Development of a complex mixed production system for plain paper copier machines |
| T. SATA, H. HIRAOKA, M. MIKI and S. TAKATA | 417 | Functions required for advanced flexible manufacturing systems |

T. TORII and Y. YAMAMOTO

423 Shop floor control in computer-integrated manufacturing for large-scale integrated wafer fabrication systems

N. OKINO and M. SHONO

429 Robot simulator in TIPS/geometric simulator

D. S. MILUTINOVIC, M. P. TURCHAN,
F. KIMURA, T. SATA and V. R. MILACIC

439 A model-based vision system for industrial parts using a small computer

451 Announcements

i New Patents

I Software Survey Section

